ABSTRACT OF THE DISCLOSURE

Methods, systems, and articles of manufacture consistent with the present invention provide for predicting system failure based on pattern recognition of subcomponent exposure to failure. A dataset is generated that has at least one exposure level to failure of a computer-based system and a corresponding rule identifier of a rule used to calculate the exposure level. The rule asynchronously receives information about the computer-based system and calculates the exposure level based on the received information. The generated dataset is compared to a previously generated dataset by comparing the at least one exposure level of the dataset to an at least one exposure level with the same rule identifier in the previously generated dataset, where the previously generated dataset is associated with a known problem with the computer-based system. A probability of a problem with the computer-based system is calculated based on a number of exposure levels in the generated dataset matching exposures levels in the previously generated dataset.